


Rotary Shafts – D Tolerance h9 (Cold-Drawn) / h7 & g6 (Ground)

One End Tapped

Select from h9 (Cold-drawn), h7 (Ground) and g6 (Ground) for your applications.



RoHS10

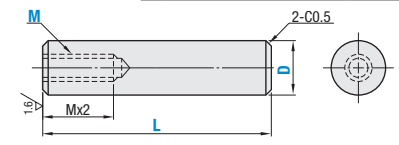
Surface roughness of D part for h9 (Cold-Drawn) is $\frac{1}{10}$. Surface roughness for h7 (Ground) and g6 (Ground) is $\frac{1}{5}$.

Type	Type		D Tolerance	Material	Surface Treatment
	Standard	Wrench Flats			
(1)	NSFMRT	NSFMRTS	h9 (Cold-Drawn)	1045 Carbon Steel or Equivalent	—
	SFMRT	SFMRTS			
	PSFMRT	PSFMRTS			
	SSFMR	SSFMR			
	NSFHRT	NSFHRTS			
(2)	SFHRT	SFHRTS	h7 (Ground)	1045 Carbon Steel or Equivalent	Black Oxide
	PSFHRT	PSFHRTS			
	SSFHRT	SSFHRTS			
	NSFRT	NSFRTS			
	SFRT	SFRTS			
(3)	PSFRT	PSFRTS	g6 (Ground)	1045 Carbon Steel or Equivalent	Black Oxide
	SSFRT	SSFRTS			
	HFRT	—			
	PHFRT	—			
	—	—			

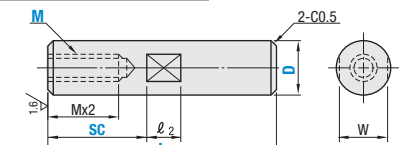
Tolerance Table

D	h9 (Cold-Drawn)	h7 (Ground)	g6 (Ground)
4–6	0	0	-0.004
8–10	-0.030	-0.012	-0.012
12–18	0	0	-0.005
20–30	-0.036	-0.015	-0.014
35–50	-0.043	-0.018	-0.017
	0	0	-0.006
	-0.052	-0.021	-0.020
	0	0	-0.007
	-0.062	-0.025	-0.025

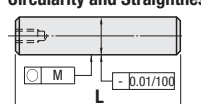
Standard



Wrench Flats



Circularity and Straightness



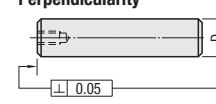
Not applicable to h9 (Cold-Drawn).

Circularity of Part D

Over	D	To	Circularity M
3	13	0.004	
13	20	0.005	
20	40	0.006	
40	50	0.007	

Not applicable to h9 (Cold-Drawn).

Perpendicularity



Not applicable to h9 (Cold-Drawn).

Tolerances of L and Other Dimensions

Dimension	or Less	Tolerance
2	6	±0.1
6	30	±0.2
30	120	±0.3
120	400	±0.5
400	800	±0.8

(1) h9 (Cold-Drawn)

Part Number Type	D	L=0.1 mm Increment	M (Coarse) Selectable	SC 1 mm Increment With Wrench Flats Only	W	ℓ ₂
NSFMRT SFMRT PSFMRT SSFMR	4	15.0–200.0	2	—	—	—
	5	15.0–250.0	2 2.6 3	SC+ℓ ₂ ≤L SC=0 or SC≥1 ⊗ For SC≤Mx3 W-M=2	5	8
	6	15.0–400.0	2.6 3 4		7	
	8	15.0–500.0	2.6 3 4 5 6		8	
	10	15.0–600.0	3 4 5 6		10	
	12	15.0–700.0	4 5 6 8		13	
	15	15.0–800.0	4 5 6 8 10		17	
	20	30.0–1000.0	4 5 6 8 10 12 16		22	
	25	50.0–1000.0	4 5 6 8 10 12 16		27	
	30	60.0–1000.0	6 8 10 12 16 20		30	
	35	70.0–1000.0	6 8 10 12 16 20 24		30	

(2) h7 (Ground)

Part Number Type	D	L=0.1 mm Increment	M (Coarse) Selectable	SC 1 mm Increment With Wrench Flats Only	W	ℓ ₂
NSFHRT SFHRT PSFHRT SSFHRT	4	15.0–200.0	2	—	—	—
	5	15.0–250.0	2 2.6 3	SC+ℓ ₂ ≤L SC=0 or SC≥1 ⊗ For SC≤Mx3 W-M=2	5	8
	6	15.0–400.0	2.6 3 4		7	
	8	15.0–500.0	2.6 3 4 5 6		8	
	10	15.0–600.0	3 4 5 6		10	
	12	15.0–700.0	4 5 6 8		13	
	15	15.0–800.0	4 5 6 8 10		17	
	20	30.0–1000.0	4 5 6 8 10 12 16		22	
	25	50.0–1000.0	4 5 6 8 10 12 16		27	
	30	60.0–1000.0	6 8 10 12 16 20		30	
	35	70.0–1000.0	6 8 10 12 16 20 24		30	
	40	80.0–1000.0	10 12 16 20 24 30		36	
	50	100.0–1000.0	12 16 20 24 30		41	

(3) g6 (Ground)

Part Number Type	D	L=0.1 mm Increment	M (Coarse) Selectable	SC 1 mm Increment With Wrench Flats Only	W	ℓ ₂
NSFRT SFRT PSFRT SSFRT	4	15.0–200.0	2	—	—	—
	5	15.0–250.0	2 2.6 3	SC+ℓ ₂ ≤L SC=0 or SC≥1 ⊗ For SC≤Mx3 W-M=2	5	8
	6	15.0–400.0	2.6 3 4		7	
	8	15.0–500.0	2.6 3 4 5 6		8	
	10	15.0–600.0	3 4 5 6		10	
	12	15.0–700.0	4 5 6 8		13	
	13	15.0–700.0	4 5 6 8		11	
	15	15.0–800.0	4 5 6 8 10		13	
	16	15.0–900.0	4 5 6 8 10		14	
	17	30.0–900.0	4 5 6 8 10 12		15	
	18	30.0–900.0	4 5 6 8 10 12		17	
	*20	30.0–1000.0	4 5 6 8 10 12 16		19	
	*22	40.0–1000.0	4 5 6 8 10 12 16		22	
	*25	50.0–1000.0	4 5 6 8 10 12 16		27	
	*30	60.0–1000.0	6 8 10 12 16 20		30	
*35	70.0–1000.0	6 8 10 12 16 20 24	36			
*40	80.0–1000.0	10 12 16 20 24 30	41			
*50	100.0–1000.0	12 16 20 24 30	41			

Rotary Shafts – D Tolerance h9 (Cold-Drawn) / h7 & g6 (Ground)

One End Tapped, continued

Available Types

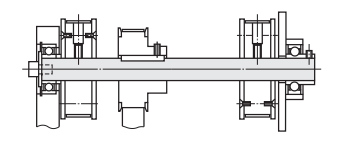
(1) h9 (Cold-Drawn)

Type	NSFMRT, NSFMRTS, SFMRT, SFMRTS, PSFMRT, PSFMRTS										SSFMR, SSFMRTS								Type	HFRT, PHFRT									
	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1	L800.1	L1000.1	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1		L800.1	D	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1
4	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	1000.0	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	1000.0	15	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	1000.0	
5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	20	*	*	*	*	*	*	*	*	*
6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	25	*	*	*	*	*	*	*	*	*
8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	30	*	*	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	35	*	*	*	*	*	*	*	*	*
12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	40	*	*	*	*	*	*	*	*	*
15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	45	*	*	*	*	*	*	*	*	*
20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	50	*	*	*	*	*	*	*	*	*
25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*										
30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*										
35	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*										
40	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*										
50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*										

(2) h7 (Ground) (3) g6 (Ground)

Type	NSFHRT, NSFHRTS, SFHRT, SFHRTS, PSFHRT, PSFHRTS, SFRT, SFRTS, PSFRT, PSFRTS										SSFHRT, SSFHRTS, SSFRTS, SSFRTS								
	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1	L800.1	L1000.1	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1	L800.1
4	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	1000.0	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	1000.0	
5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
35	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
40	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Application Example Select from h9 (Cold-Drawn), h7 (Ground) and g6 (Ground) for your applications.



Part Number Alterations Part Number - L - M - SC - (KC, WKC, FC...etc.)
SFMRTS10 - 150 - M4 - SC30 - LKC

Part Number Example Part Number - L - M - SC
SFMRT30 - 250 - M12
SSFHRTS25 - 200 - M8 - SC20

Alterations	Keyway	Set Screw Flat	2 Set Screw Flats (Angle Specified)	Slit Cam Groove	L Dimension Tolerance	Retaining Ring Groove
Code	KC / WKC / KZ	FC, WFC	SFC	UC	LKC	TA, TB
Spec.	KC: Adds a keyway. Ordering Code: KC50-A10 WKC: Adds two keyways. Ordering Code: WKC50-C8-K40-E10 Ordering Code: KZ100-Z10 ⊙ KC, A, WKC, C, E, K, KZ, Z = 0.1 mm increment ⊙ A, C, E, Z ≤ 100 ⊙ For keyway details refer to P.853. ⊙ If 3 keyways are required use both KC and WKC. If 4th keyway is required use KZ only as addition to KC and WKC. ⊙ When keyway position is less than 1 mm away from the end face, R is not applied. Ex.	FC: Adds 1 set screw flat. Ordering Code: FC10-G3 WFC: Adds 2 set screw flats. Ordering Code: WFC10-J3-W10-V3 ⊙ FC, G, WFC, J, W, V = 1 mm increment ⊙ G, J, V ≤ 50	Adds a set screw flat at any designated angle besides the datum plane (0°). SFC, SG = 1 mm Increment AG = 15° Increment ⊙ SG ≤ 50 Ordering Code: SFC10-SG3-AG120	Adds a slit cam groove. UC = 1 mm Increment Ordering Code: UC10 ⊙ UC+ℓ ₂ ≤L ⊙ UC ≥ 1 ⊗ Not applicable to D13 or more.	Changes L Dimension Tolerance. Ordering Code: LKC ⊙ L < 500 → L ± 0.05 ⊙ L ≥ 500 → L ± 0.1 ⊗ Not applicable to L = 800 or more	Adds a retaining ring groove. (Applicable retaining rings are included.) Ordering Code: TA10-TB10 ⊙ TA, TB = 1 mm Increment ⊙ 2 ≤ TA, TB ≤ 150 ⊙ For dimensions of the retaining ring groove, please refer to P.853.

Alterations	Add Slit	C Chamfer Change on D	Tapped Depth
Code	MM	CD	MD
Spec.	Slit is added to the D dim side face. Ordering Code: MM ⊗ Not Applicable when D ≥ 35	CD = Selection from Table below. Ordering Code: CD2 Chamfer (CD) Applicable Dia. C2 ⌀6–⌀51 C3 ⌀8–⌀51 C4 ⌀10–⌀51 C5	